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F2P PA29

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(56) Documents Cited

GB 2062803 A GB 2032572 A GB 1250015 A

GB 1212825 A GB 0818700 A EP 0666443 A1

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(58) Field of Search

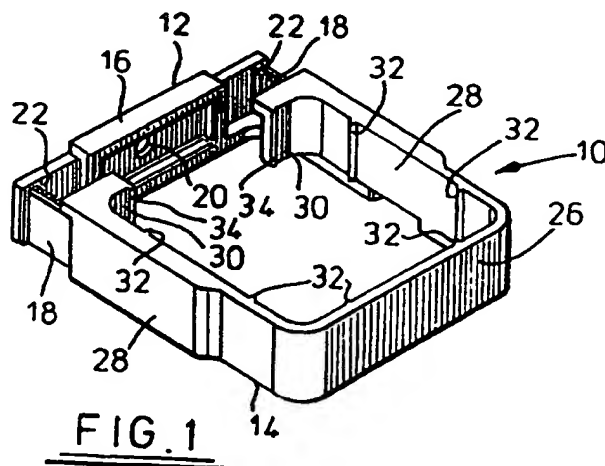
UK CL (Edition Q) F2P PA21 PA22 PA29 PA7 PA8

INT CL⁶ E04D 13/08, F16L 3/00 3/10 3/12 3/13

(54) Abstract Title

Pipe support

(57) A pipe support 10, for securing a down pipe to a wall (see figures 4-6), comprises a first part 12 fixable to a surface and being attachable to a second part 14 which forms an at least partial enclosure for a pipe to be supported. The distance of the pipe from the surface is adjustable by means of the attachment between the first and second parts being selectively adjustable. Preferably, the two parts 12,14 are U-shaped, the side arms 18,28 of each part having interengageable meshing teeth 22 (better seen in figures 3 and 6A). The second part 14 preferably includes inwardly turned ends 30 so that the pipe is moved towards or away from the surface by sliding the second part 14 relative to the first part 12. The relative movement of the two parts 12,14 may be restricted by abutments on the arms (24,43; figures 2,3) or by using triangular shaped teeth.



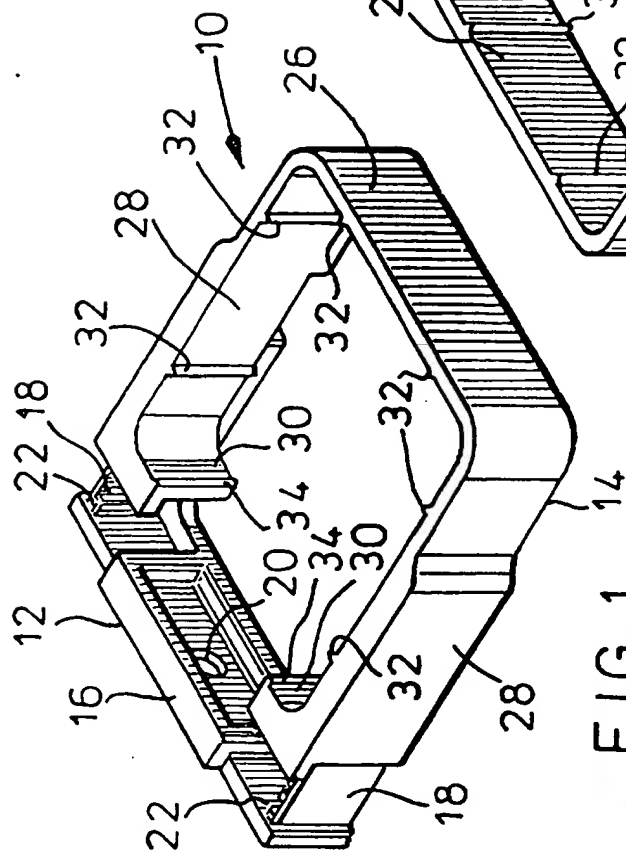


FIG. 1

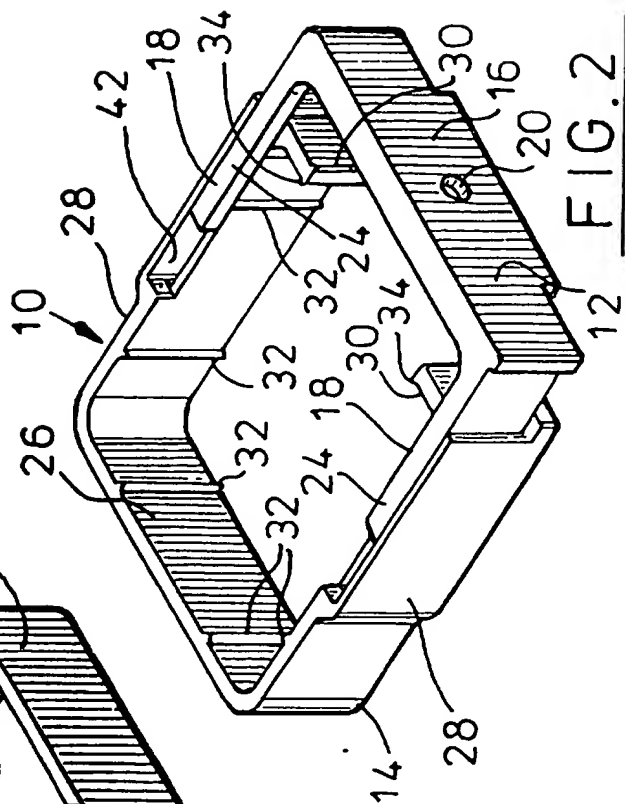


FIG. 2

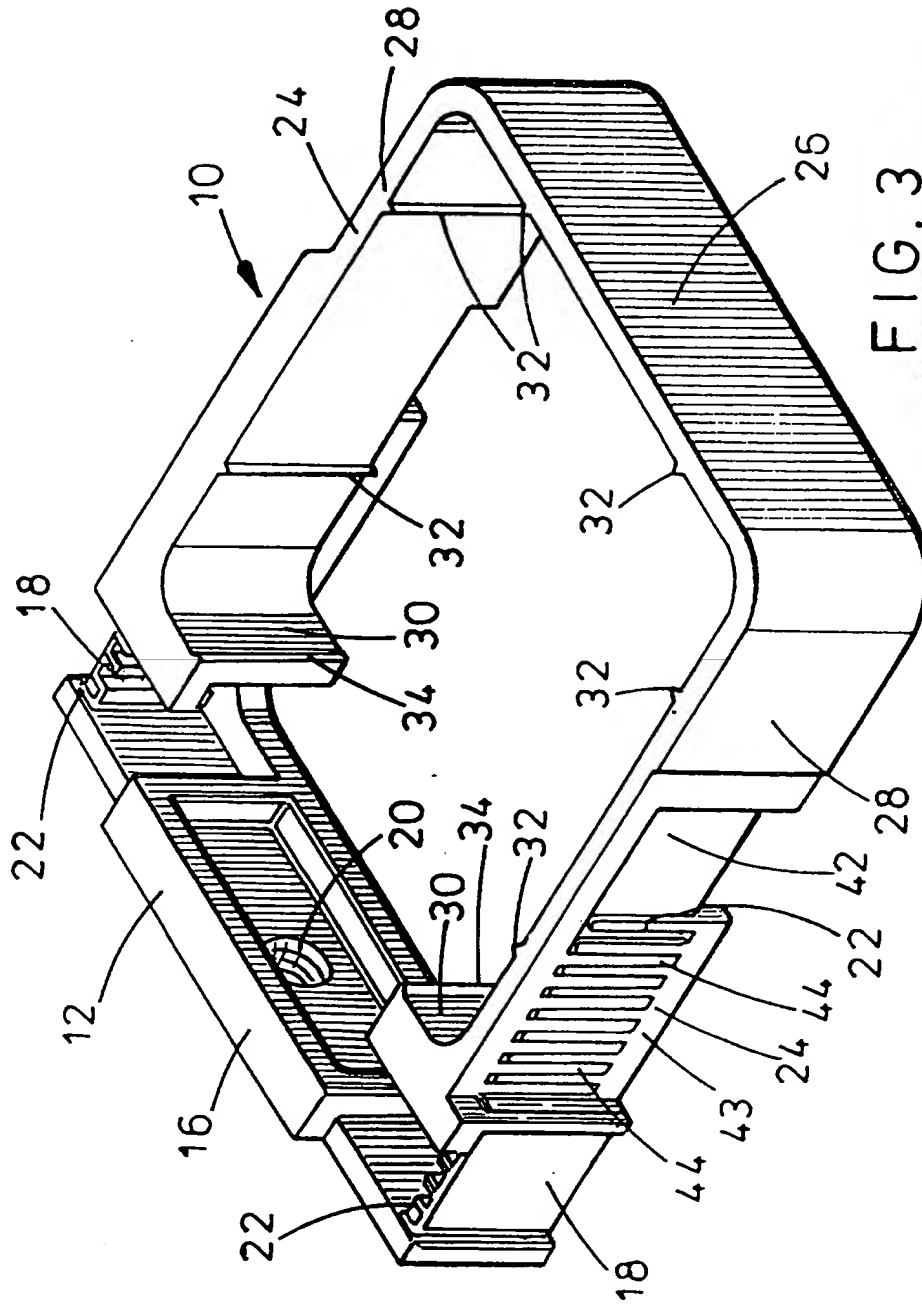


FIG. 3

3-5

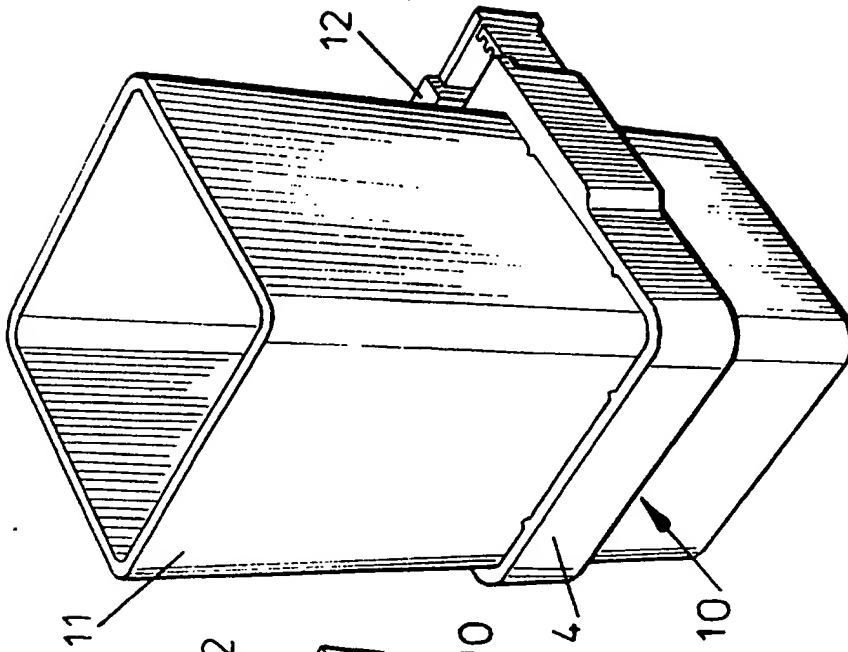


FIG. 5

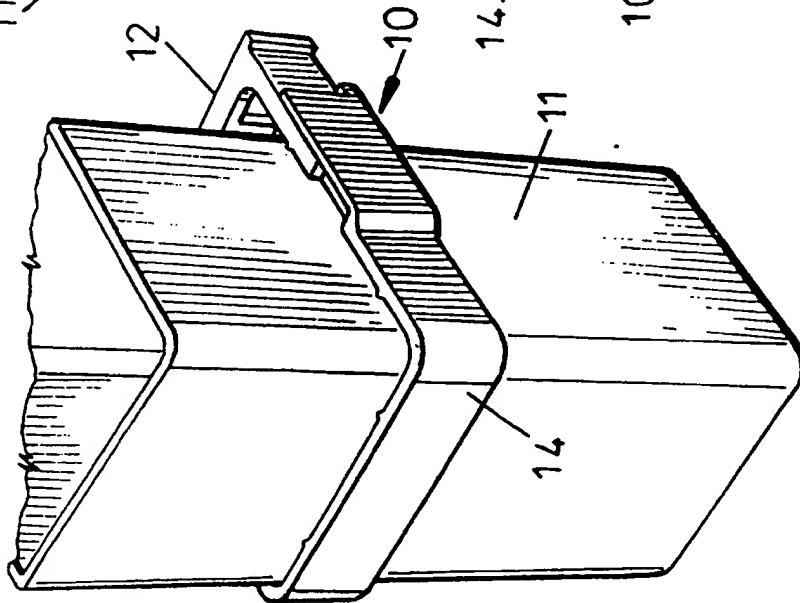


FIG. 4

4-5

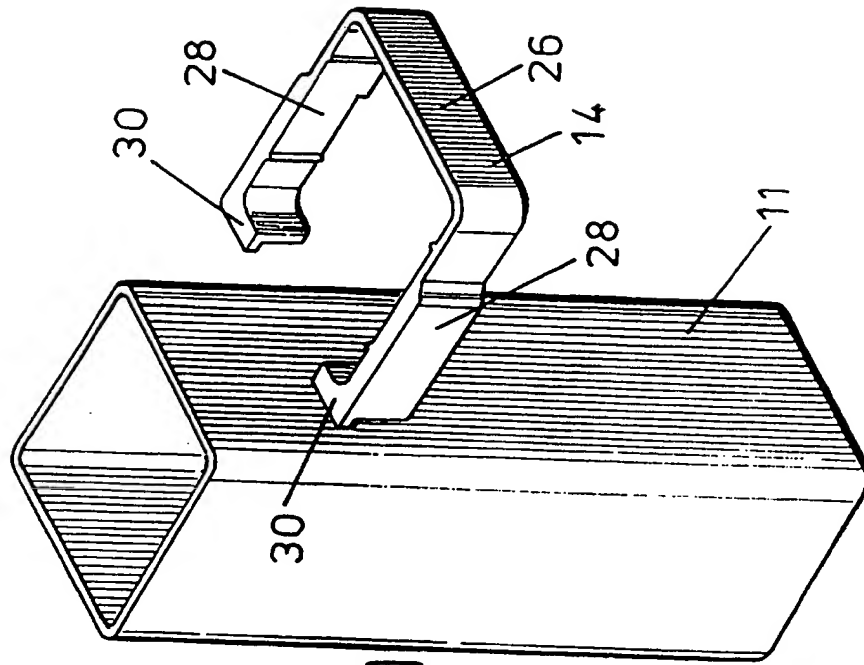


FIG. 6B

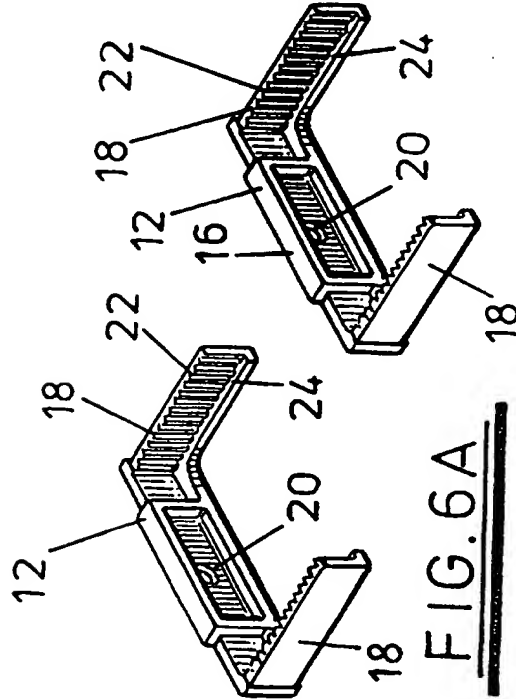


FIG. 6A

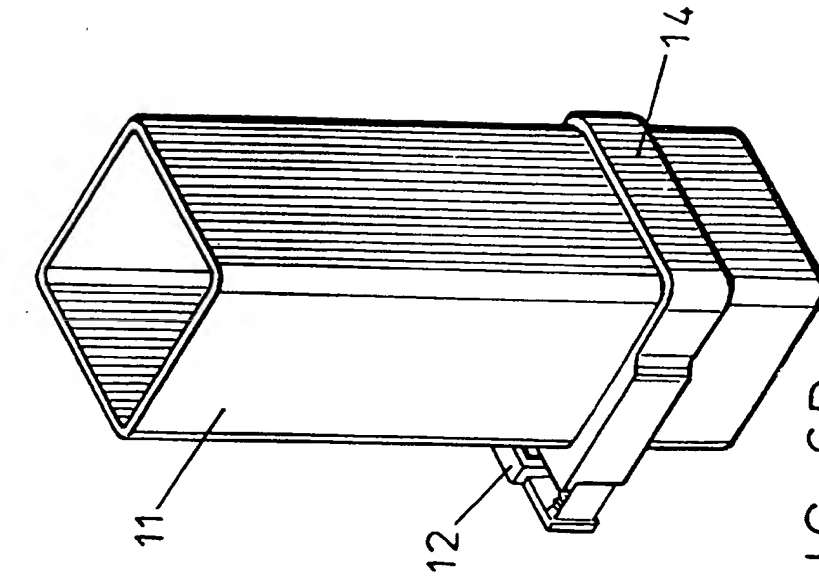


FIG. 6D

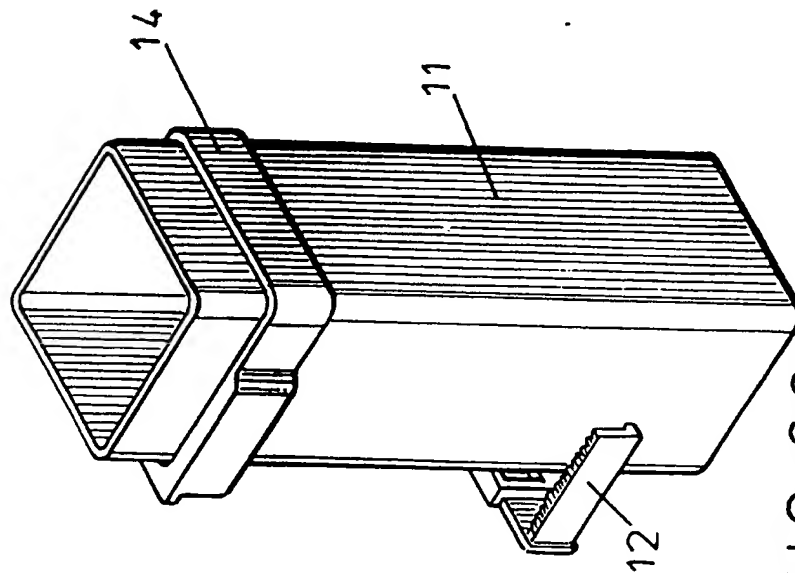


FIG. 6C

TITLE: Connecting Device

DESCRIPTION

This invention concerns connecting devices, especially connecting devices for attaching pipes or other elongate items to underlying surfaces, such as to walls.

A down pipe for delivering water collected in a gutter to a drain is usually attached to a wall using clips that are secured to the wall and fastened around the down pipe. Available clips are of one size and so do not allow for variations in spacing between the down pipe and the wall which occur due to irregularities in the wall and the relative positioning of the guttering to which the down pipe is connected at its top. Because of the above, sometimes clips cannot be fastened properly and so spring open or strain is put on the down pipe affecting its connection to the guttering or its other fastening clips.

An object of this invention is to provide a connecting device especially but not exclusively suitable for attaching a pipe to a surface.

According to this invention there is provided a connecting device suitable for attaching a pipe to a surface comprising a first part fixable to the surface and a second part attachable to the first part and forming an at least partial enclosure for the pipe, the attachment of the second part to the first part being selectively adjustable, whereby spacing of the pipe from the surface may be adjusted.

The first part of the connecting device of the invention is preferably U-shaped providing a base which is arranged to be fixed to the surface, such as, for example, by means of one or more screws or the like through provided holes in the base, and arms extending from the base.

The second part of the connecting device of the invention is preferably also U-shaped having a base and an arm extending from each end of the base. The arms of the first and second parts of the connecting device of the invention are preferably selectively interengageable. The inner faces of the arms of one part preferably have a series of spaced teeth which are selectively engageable between corresponding teeth on outer faces of the arms of the other connecting device part.

The teeth of the outer faces of the arms of the other connecting device part, preferably the second part are preferably within channels in the arms, so that the arms of one part fit into the corresponding channels of the arms of the other part when the respective series of teeth are interengaged.

The respective series of teeth are preferably arranged so that the two parts of the connecting device of the invention can only be engaged to a limited extent in order to prevent them from slipping past each other. Thus, abutments may be provided on each arm for the teeth of an arm of the other part of the device with which it is to engage. The abutments may be provided by base strips from which the teeth of each arm extend. Alternatively, the teeth may be shaped, such as by being triangular in plan, whereby their extent of movement together is limited by said shaping.

The second part of the connecting device of the invention preferably has inwards returns at the ends of its arms, so that a pipe or the like is retained in said second part.

The connector device of the invention is preferably used by fixing the first part to a surface and sliding the second part onto a pipe and down onto the first part to engage the two parts and hold the pipe to the surface. The second part will engage the first part at a desired spacing from the pipe from the surface.

This invention will now be further described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view from above of a down pipe connecting device according to the invention;

Figure 2 is a perspective view from below of the connecting device of Figure 1;

Figure 3 is a part cut away perspective view from above of the connecting device of Figure 1;

Figure 4 is a perspective view from below of the connecting device of Figure 1 fitted to a down pipe;

Figure 5 is a perspective from above of the connecting device of Figure 1 fitted to a down pipe;

Figure 6A to D shows steps in fitting a connecting device of Figure 1 to a down pipe.

Referring to the accompanying drawings, a connecting device or clip 10 for

securing a down pipe 11 to a wall or other surface, such as a mullion or corner post of a glazed conservatory wall, comprises two parts 12 and 14. The two parts 12, 14 are generally U-shaped and shaped to fit together in an overlapping fashion.

The one part 12 has a base 16 and sides 18 extending generally normally from the base. The base 16 is provided with a screw hole 20 so that it can be secured to a wall or other suitable surface. The sides 18 have on their facing surfaces spaced teeth 22 extending upwards from a base strip 24.

The other part 14 of the clip has a base 26 and sides 28 that turn inwards at their ends 30 to a small extent. The part 14 has its internal corners rounded to correspond to the shape of conventional square section down pipes. Of course, the part 14 of the clip may be of any desired shape, such as to fit circular section pipes. On their internal surfaces, the base 26 and sides 28 and each have a pair of spaced ribs 32. The ends 30 of the sides 28 each also have on their internal surface at the end thereof a rib 34. The ribs 32 and 34 simply facilitate the fitting of the clip to a downpipe by reducing areas of contact and hence reducing friction between the clip and the down pipe.

The sides 28 of the second clip part 14 are wider over a major portion of their length up to their free ends and the wider portions are slotted from below to form channels 42. On the inside of each channel 42 on one face thereof from a base strip 43 extend a series of spaced teeth 44 shaped and sized to interfit between the teeth 22 of the sides 18 of the one part 12. Thus, the second part 14 can be slid down onto the first part 12 with the teeth of the one part engaged with

the teeth of the other part at a desired position to give a desired spacing of the second part from the base 16 of the first part. The respective base strips 24 and 43 limit the extent of interengagement of the teeth.

The clip 10 is used in the following manner as shown in Figures 6A to 6D of the accompanying drawings to fix a down pipe to a wall or other suitable surface. Firstly the first part 12 is fixed to the wall or other suitable surface at a desired location using a screw through the base 16. Then the second part is placed on the down pipe and the down pipe positioned, which may involve coupling thereof to a gutter. The second part of the clip is then slid down onto the first part so that their respective teeth interengage. The two parts of the clip may lock together simply by friction, by mechanical fixings or by engagement of integral locking components.

It will be appreciated that whilst the connecting device of the invention has been described in relation to connecting down pipes to a structure, the connecting device of the invention may be used for connecting other elongate items to an underlying structure in any orientation.

CLAIMS

1. A connecting device suitable for attaching a pipe to a surface comprising a first part fixable to the surface and a second part attachable to the first part and forming an at least partial enclosure for the pipe, the attachment of the second part to the first part being selectively adjustable, whereby spacing of the pipe from the surface is adjustable.
2. A device as claimed in claim 1, wherein the first part is U-shaped providing a base, which is arranged to be fixed to the surface, and arms extending from the base.
3. A device as claimed in claims 1 or 2, wherein the second part is U-shaped having a base and an arm extending from each end of the base.
4. A device as claimed in claim 3, wherein the arms of the first and second parts are selectively interengageable.
5. A device as claimed in claim 4, wherein inner faces of the arm of one part have a series of spaced teeth which are selectively engageable between corresponding teeth on outer faces of the arms of the other part.
6. A device as claimed in claim 5, wherein the teeth of the outer faces of the arms of the other part are within channels in the arms.
7. A device as claimed in claim 5 or 6, wherein the respective series of teeth are arranged so that the two parts of the device are only engageable to a limited extent, whereby one part is prevented from slipping past the other part.

8. A device as claimed in claim 7, wherein abutments are provided on each arm for the teeth of an arm of the other part.
9. A device as claimed in claim 8, wherein the abutments are provided by base strips from which the teeth of each arm extend.
10. A device as claimed in claim 7, wherein the respective series of teeth are shaped to limit their extent of movement together.
11. A device as claimed in claim 10, wherein the teeth are triangular in plan.
12. A device as claimed in any one of claims 1 to 10, wherein the second part has inwards returns at the ends of its arms.
13. A connecting device for use in attaching a pipe to a surface substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.



Application No: GB 9901421.9
Claims searched: 1-13

Examiner: Dr Steve Chadwell
Date of search: 3 July 1999

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): F2P (PA7, PA8, PA21, PA22, PA29)

Int Cl (Ed.6): E04D 13/08; F16L 3/00 3/10 3/12 3/13

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X,Y	GB 2062803 A (AMES CROSTA BABCOCK) see whole document	X: 1,2 Y: 4-7, 10,11
X,Y	GB 2032572 A (SNAMPROGETTI) see whole document	X: 1,3,4 Y: 5-7, 10,11
X,Y	GB1250015 (TWR) see whole document, especially page 2 lines 54-72	X: 1,3 Y: 4-7, 10,11
X,Y	GB 1212825 (ACTIVATED SLUDGE) see whole document	X: 1,3 Y: 4-7, 10,11
X	GB 818700 (SCHWACHULA) see embodiment shown in figure 7	1,3
Y	EP 0666443 A1 (CO.PRO.TEC.) see whole document	4-7,10,11
X	US 4709888 (COPE) see whole document	1,3
Y	US 4118838 (HILTI) see especially figures 1-3	4,5,7, 10,11

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